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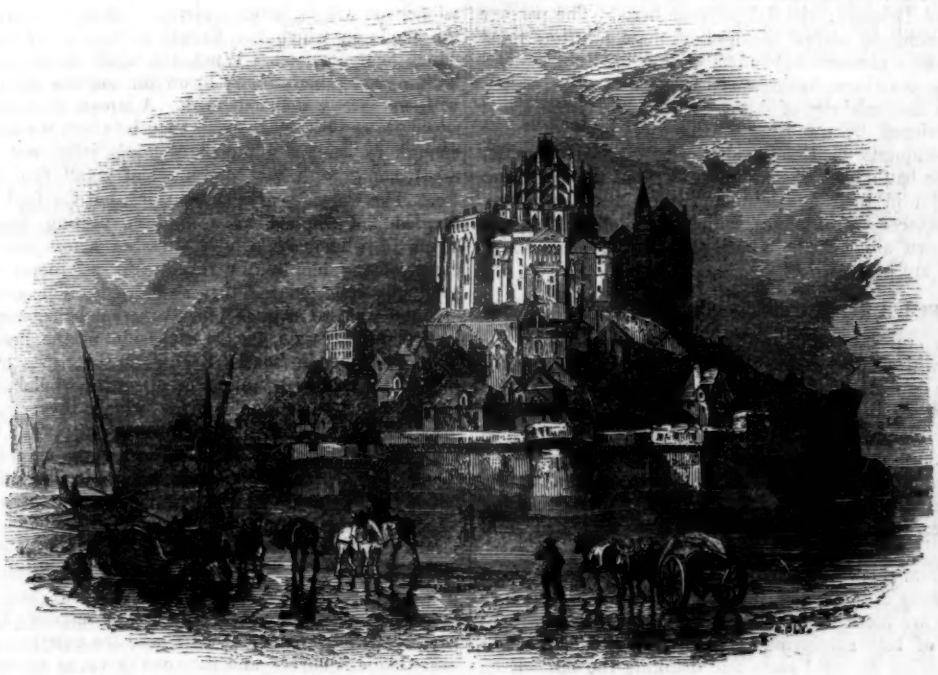
MONT ST. MICHEL.



[Mont St. Michel, Department of La Manche, France.]

BETWEEN Cape La Hogue and a projecting part of the French coast north-west of Brest there is an extensive indentation of the sea, called the Bay of St. Malo, which forms the boundary of three departments, La Manche, L'Ile et Vilaine, and Les Côtes du Nord. Mont St. Michel is situated in the angle formed by the sides of this bay. It is a majestic rock, rising in the midst of a vast plain of sand, which, at high-water, is overflowed by the sea. In some places it is nearly perpendicular, and in others, where nature has left it more accessible, it is flanked by towers and bastions. As it was impossible at the same time to convey an idea of the singular situation of Mont St. Michel and the character of the buildings with which it is covered, the latter object only has engaged the artist's attention in the wood-cut. Let the reader, however, "imagine a desert of sand, consisting of eight square leagues of surface, traversed by several rivers, the waters of which in some places spread themselves out in the form of a lake. Carry your eye beyond this desert of sand to a still mightier desert of sea, which you will know by its deeper colour; and just before arriving at the margin (not easily ascertained) of the latter, build up a granite rock with towers, on a base of a quarter of a league in circumference, to the height of five hundred feet. This is Mont St. Michel at the reflux of the tide. Then fancy that the desert of sand was but a dream, and that the great ocean fills the whole area, and rear in the midst of this waste of waters the same granite mountain. This is Mont St. Michel four days before and after the new moon."* Such a rock, surmounted by a church and buildings which give it the air of a fort and a prison at the same time, would be a remarkable object in any situation; but placed as it is, neither belonging wholly to the land nor yet to the water, the impressions which it creates on the spectator are of a singular and impressive character.

The view from the highest parts of Mont St. Michel embrace the coasts of Brittany on the left, and Normandy on the right. Eastward the eye is caught by the view of towns and villages, and westward the horizon is bounded by the ocean. Although the rock may be approached when the tide has ebbed, the passage across the sands should never be ventured upon by persons unacquainted with the track, as there are quicksands in which strangers have been frequently lost; and a guide is therefore absolutely necessary. There is also considerable danger in case of a thick fog suddenly obscuring the atmosphere; and it is the practice at such times to ring the bells of the village churches on the mainland to direct those who might otherwise be wandering on the sands until the tide rushed in and engulfed them.

There is a small town on Mont St. Michel, inhabited chiefly by a few innkeepers, shopkeepers, and fishermen A steep and crooked street leads to the abbey and the castle, the latter being appropriated as a prison for political offenders. This fort is of course strictly guarded, and strangers are not admitted. The buildings rise to a great elevation, and subterranean excavations are made in the rock; but the more humane spirit of the age has caused the dungeons of the middle ages to be abandoned, so far as the incarceration of human beings is concerned.

* 'Landscape Annual.'

The provisions and other articles for the supply of the prisoners are hoisted up by pulleys from the outside of the rock. There is a telegraph on the top of the church, which communicates with Paris.

The chapel, dedicated to St. Michael, was first erected about the year 708; about 966, Richard, the first duke of Normandy, formed a convent of monks of the Order of St. Benoit; and about 1024, Richard, the second duke of Normandy, built the church, which still exists. The shrine of St. Michael drew many pilgrims from all quarters, amongst whom were the kings of France and the dukes of Brittany, who did penance here. The passage of the sands by several hundred of these pilgrims must have been a pleasant sight in those times. Religion and war, the prominent features of these times, alike contribute to the celebrity of Mont St. Michel. In 1423, it was besieged by the English, who had been pursuing their conquests in France almost without interruption from the battle of Agincourt in 1415; but they were not successful in their attack upon the rock, and two large clumsy pieces of ordnance, which they left behind, are still shown amongst those curiosities of the place which visitors are permitted to see.

USEFUL PRODUCTS OF THE WHALE.—No. I.

In our second volume (No. 74) we presented the reader with a brief sketch of the objects, the excitements, and the dangers of the whale fishery. We propose now to follow up that account with a few details respecting the useful products of the whale, and the manner in which those products are rendered fit for the market.

There are many uses to which different parts of the whale are applied in England and other manufacturing countries, the principal of which are *oil*, extracted from the fat; *whalebone*, taken from the mouth; *spermaceti*, taken from the head; and *glue*, extracted from the muscular fibres of the tail. But among less civilised nations its uses are more varied. The inhabitants of the northern shores of both continents make an article of food of the flesh, eating the solid parts and drinking the oil. Even the skin is eaten raw. "It is not uncommon," says Mr. Scoresby, "when the females visit the whale-ships, for them to help themselves to pieces of skin, preferring those with which a little blubber (fat) is connected, and to give it as food to their infants suspended on their backs, who suck it with apparent delight. Blubber, when pickled and boiled, is said to be very palatable; the tail, when parboiled and then fried, is said to be not unsavoury, but even agreeable eating; and the flesh of young whales, I know from experiment, is by no means indifferent food." Even in the more southern parts of Europe, three or four centuries ago, the flesh of the whale was considered by no means unpleasant food. The Esquimaux supply many of their simple wants from various parts of the whale. From some of the membranes they make outer garments; from a stiff but transparent skin they prepare a substitute for glass in the windows of their huts; from the bones they make harpoons, spears, supports for tents, and ribs for boats; from the sinews, divided into filaments, they make thread; and from the substance erroneously called by us whalebone, they produce numerous articles.

We may here state that the species of whale captured for the sake of the oil and whalebone, viz. the Greenland whale, is not the same as that from which spermaceti is procured, and which is called the sperm whale. Let us suppose then that a Greenland whale has been captured, towed by the men in the boats, and secured to the side of the ship. The operations of the men are then to cut off and collect the blubber, the whalebone, and the jawbones, and to leave the rest of the carcass to its fate. Blubber constitutes the fat of the animal, and encompasses the whole body immediately beneath the external skin; it is of a firm consistence, and of a colour varying from yellowish-white to salmon colour. It lies in a compact bed from eight to twenty inches in thickness, all over the whale. The under-jaw, the lips, and the tongue are composed almost wholly of this substance. The constitution of the blubber appears to be an oily matter contained in an assemblage of minute cells formed of tendinous fibre; the oil is separable from the fibres by heat, and also by the effects of decomposition. Whalebone is situated within the animal's mouth in the position where teeth might be expected to be found. This species of whale has no teeth, and the use which it derives from the whalebone will be better understood by a consideration of the mode in which the animal collects the small fish which form its food. When the whale feeds, it swims with considerable velocity below the surface of the sea, with its jaws widely extended. A stream of water consequently enters the capacious mouth (which is often large enough to contain a merchant-ship's jolly boat full of men), along with vast quantities of small fish, insects, &c. The water escapes at the sides, but the food is entangled and stopped by a kind of grating formed of strips of whalebone, which stretches across within the cavity of the mouth; by this means a "mouthful" is gradually collected, and then swallowed. This grating is composed of two rows or "fins" of whalebone, suspended from the upper jaw, one on each side of the head, and almost meeting in front. Each "fin" consists of more than three hundred laminæ or plates of whalebone, the longest near the middle, from which they gradually diminish away to nothing at each extremity. The longest lamina is from ten to fifteen feet in length, according to the size of the animal, and diminishes in breadth from ten or twelve inches nearly to a point, the greatest thickness never exceeding half an inch. Each piece is therefore a blade, some of them of formidable dimensions. These blades are ranged side by side, two-thirds of an inch apart (thickness of the blade included), and resemble a frame of saws in a saw-mill. The interior edges are covered with a fringe of hair, and the exterior edge of every blade is curved and flattened down, so as not to cut the inside of the lip. The colour of the blades is a brownish or bluish black, sometimes striped longitudinally with white. The blades are inserted into the bone in a sort of groove; and all the blades forming one series or "fin" are connected together by a kind of gummy substance at their thick ends. This gum is white, fibrous, tender, and tasteless; it cuts like cheese, and has somewhat the appearance of the kernel of a cocoa-nut.

Such being the nature and position of the blubber and the whalebone, for which this whale is principally captured, the proceedings of the captors are as follows:—The whole of the operations are performed at the ship's side, the animal being far too ponderous to be hauled on deck. The dead whale being secured by ropes, some men descend upon its body (their shoes being armed with spikes to prevent them from slipping), and firmly attach some hooks to the fat or blubber surrounding the neck. A band of blubber, two or three feet in width, and passing round the animal immediately behind the head, is called by the whalers the kent, and to this kent the hooks are secured. The hooks are attached to pulleys connected with the rigging of the ship, and the object is to be able to turn the whale over and over by unwrapping the kent, as it were (like a bandage), from around the animal. The tail is cut off, and conveyed on board, and the men begin to cut off the blubber. They are provided with knives and spades of various kinds, large and small, with which they divide the blubber into oblong pieces, or "slips." Each piece, as it is cut off, is hauled up by a pulley into the ship, until the whole is removed from that side of the whale which happens to be uppermost, generally the belly. By a powerful movement of the tackle connected with the kent, the animal is turned or "kented" partially round, so as to present

another layer or strip of blubber, which is cut off as before, from head to tail. By successive turnings and cuttings the mighty monster is deprived of the whole of what once formed the fat of his body. The muscle, flesh, or meat of the whale is situated beneath the blubber, and is not taken, because it yields no oil; it is of a reddish colour, and when cleared of fat, broiled, and seasoned with pepper and salt, is said to eat not much unlike coarse beef, if the whale be young.

While the whale is on its side an opportunity is offered for removing the whalebone. The lips being cut away, the whalebone is seen lying nearly horizontal. The whole of the mass of blades composing one side or series are removed at once by means of "bone-handspikes," "bone-knives," and other instruments, and hoisted on deck by means of tackle. Next, the jaw-bones are cut away and hoisted; and lastly, the long slip of blubber called the "kent," and which has become unwound, as it were, from the neck of the animal, is separated from the carcass and hauled on board, its length sometimes amounting to thirty feet.

The whole of the operation is called "flensing" the whale; and when completed, the tackle is disengaged, and the carcass set at liberty, which sometimes sinks, but at other times remains floating, and becomes food for bears, sharks, and various kinds of birds, all of which attack it with great earnestness. "When sharks are present, they generally take the liberty of helping themselves very bountifully during the process of the flensing; but they often pay for their temerity with their lives. Fulmars pay close attention in immense numbers. They seize the fragments occasionally disengaged by the knife, while they are swimming in the water; but most of the other gulls who attend on the occasion take their share on the wing. The burgomaster is decidedly the master of the feast. Hence every other bird is obliged to relinquish the most delicious morsel when the burgomaster descends to claim it. Bears seldom approach so near the ship as to become partakers of the banquet."*

As the various parts of the booty are hauled on deck, they are immediately stowed away. When the ranges of whalebone are brought on deck, they are split, by means of "bone-wedges," into pieces called junks, each junk containing from five to ten blades; but occasionally it is subdivided into separate blades, and the gum and hair removed before the blades are stowed away.

It was once the custom to extract the oil from blubber on the shore of Greenland, immediately after the whale was caught, by the aid of furnaces and boilers erected for that purpose; but from various causes this plan is no longer pursued. It has also been tried to effect the same object on board the whale-ships; but this has likewise been found to be attended with more disadvantages than advantages. The blubber is therefore brought to England, and reduced to oil at Hull, Dundee, and the other whaling ports. The reason why it would be desirable, if practicable, to effect this operation soon after the whale is killed, is, that the oil produced is then purer. The blubber, being a soft animal substance, is very liable to decomposition during the time occupied by the homeward voyage; and it is believed that the rancid and unpleasant smell so frequently connected with whale oil is the result of this long keeping of the blubber; for the blubber, when fresh cut, is perfectly free from any offensive odour, and the oil produced from it on the spot is also exceedingly pure. But as the quantity thus produced is smaller, and as there are certain practical difficulties attending it, the blubber is now, we believe always, brought home to be boiled down into oil.

The pieces of blubber, as cut from the whale, average about half a ton each; and these are cut, on deck, and by means of large knives, into portable pieces containing about a cubic foot each. These pieces are passed down between decks, through a hole in the main hatches, and ranged in a compact manner, until all the blubber is collected from the animal. The receptacle is gradually filled with the produce of several whales, and when full, or when the crew have leisure to attend to the stowing away, the operation of "making off" is commenced,—that is, cleaning and packing up the blubber in barrels. The barrels are ranged all over the lower parts of the vessel, and the bung-holes are left open. A kind of trough is placed upon deck, and at the side of this is a table covered with pieces of whale-tail; this substance has great tenacity and elasticity, and serves well as a chopping-block, to prevent the table from blunting the edges of the knives. A hole in the bottom of the trough is connected with a shoot or spout leading down to the casks beneath the deck, through which the pieces of blubber may descend to their proper places.

All being thus ready, the operations commence. The pieces are thrown upon deck from the hold. From each piece is removed, by various instruments, all the muscular parts, together with such spongy or fibrous fat as is known to produce but little oil; all these impurities, called kreng, are thrown away. The next point is, to cut off the outer skin from each piece, by means of a large knife. The pieces or blocks of blubber are now tolerably clean, and they are laid on the tail chopping-block, and cut up into oblong pieces of sufficiently small diameter to pass through the bung-hole of a cask. These pieces are then allowed to fall down the tube in connection with the trough, and are then guided by a man into all the casks in succession. When each cask is completely filled, it is bunged up, and stowed away in the hold. When a ground-tier of casks is completed, another tier is heaped upon them, until there is a compact mass of casks filled with blubber. Should the number of casks be insufficient, the remaining pieces of blubber are laid on the top of the upper tier, with some salt sprinkled among them, to assist in preserving them. When all is thus packed, the vessel proceeds on its homeward voyage.

The quantity of useful substance produced from a whale is very large. The Greenland whale, if of full size, averages about 60 feet in length; and its greatest circumference, a little behind the fins, is about 35 feet. The jaw-bones are often 20 feet long and 10 wide; and the lips are from 15 to 20 feet in length. The tail is 20 feet wide and 5 or 6 long. The weight of whalebone found in the mouth frequently amounts to a ton. The entire weight of a large whale reaches the enormous amount of 70 tons, of which the blubber amounts to 30. Four tons of blubber yield, on an average, about three tons of oil. Each of the enormous lips yields from one to two tons of pure oil (the ton of oil here spoken of weighs about 1933 lbs.). The process of "flensing," or cutting the blubber and whalebone from a large whale, occupies a ship's crew about four hours; and the "making-off," or cutting up and packing, from eight to twelve hours, for the produce of each whale.

The process of stripping the whale while alongside of the ship is often exceedingly troublesome, and even dangerous. If the sea happen to be rough, the ropes and blocks are incapable of bearing the strain occasioned by the weight of a whale, and often snap, and wound the men who happen to be near. The surge, beating over the dead body of the fish, drenches the men with water, and as they have but a tottering standing-place (the slippery body of the fish), they are apt to wound each other with their knives. Sometimes, too, the men fall into the fish's mouth, when it is exposed by the removal of a surface of blubber; where they might easily be drowned, but for the prompt assistance which is always at hand. Captain Scoresby mentions an instance which came under his notice, of the dangers frequently attending this occupation. A whale having been stripped, or

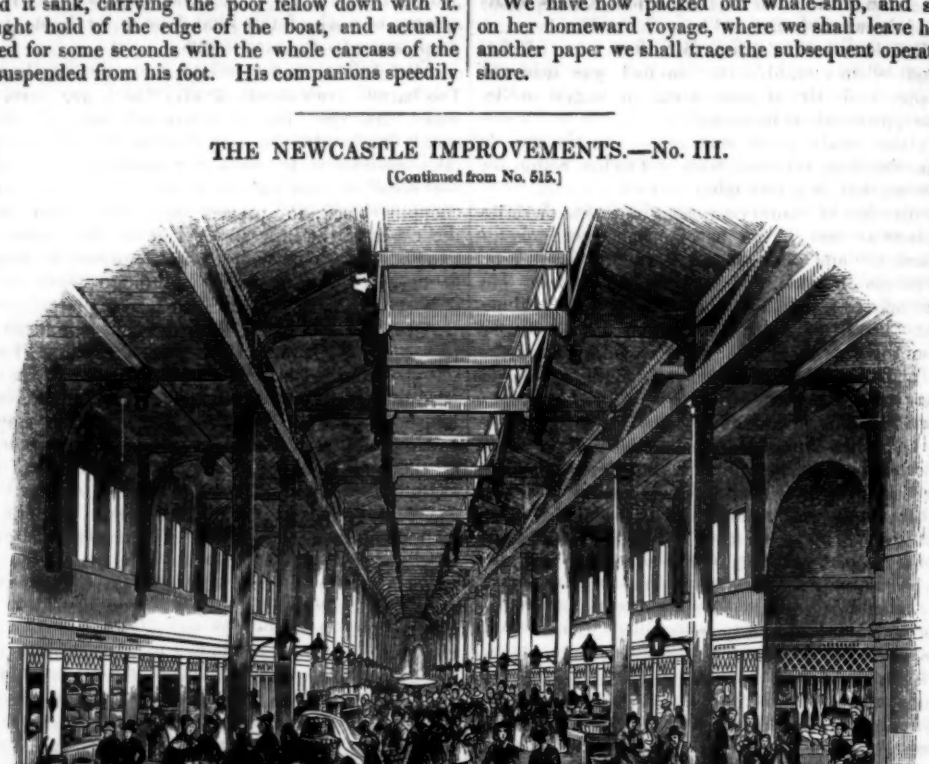
* Scoresby's 'Arctic Regions.'

"flensed," and being about to be cast off, a man who was standing on the jaw-bone got his foot entangled. Before this was discovered, the ropes retaining the whale were cut, and it sank, carrying the poor fellow down with it. He caught hold of the edge of the boat, and actually remained for some seconds with the whole carcass of the whale suspended from his foot. His companions speedily came to his assistance, and succeeded in extricating his foot from the whale, just when he seemed in imminent danger of being drawn asunder by the enormous weight.

We have now packed our whale-ship, and sent her on her homeward voyage, where we shall leave her. In another paper we shall trace the subsequent operations on shore.

THE NEWCASTLE IMPROVEMENTS.—No. III.

[Continued from No. 515.]



[Interior of Green-Market.]

At length Anderson Place, the extent of twelve acres in the middle of the town, which we have before mentioned, came into the hands of a proprietor who was willing to sell it. It soon became known that Mr. Grainger had purchased it for 50,000*l.*, and great was the curiosity among those who observed his proceedings, to learn what he would do with his new property. The secret was profoundly kept for a considerable time. His plans were matured in his own office, and not a single particular of them known till his arrangements were completed, as far as they depended on himself. Without act of parliament, he had bought other old property to the amount of 45,000*l.*, enough to enable him to open communications between some of the busy parts of the town, distant from each other, which before could be reached only by widely circuitous ways.

The first object was to form a central street in continuation of Dean Street, a thoroughfare through the midst of the best part of the town. There were two principal obstacles to the execution of this plan, the Butcher-market, erected 24 years before, and the Theatre. These buildings stood directly in the way, and they were public property; so that further secrecy became impossible. His plans were submitted to public inspection. Before this, he had opened his designs, as usual, to Mr. Fenwick. Mr. Fenwick was naturally doubtful about the issue of so prodigious a speculation, and advised his friend to transfer his business (necessary as the good-will of the Corporation had now become), to the office of Mr. Clayton, the town-clerk, and a member of a very opulent and influential family. Mr. Clayton heartily embraced Mr. Grainger's schemes; and there is no doubt that the architect and the town owe much to the influence and the command of money secured by this professional connection.

The inhabitants were eager to examine Grainger's plans; and the popular voice was so strong in favour of their execution, that the Corporation yielded up the old market without difficulty, on the architect's proposal to erect another on a new site, larger, more lofty and airy, and with better approaches. The Corporation took 15,000*l.* for the old market, and gave 36,290*l.* for the new.

Mr. Grainger got possession of the Nuns' property, and began his operations upon it in August, 1834; and the New Market opened October 24, 1835. At the same time, the houses immediately surrounding it were finished, and the approaches opened. The occasion was celebrated by a public dinner in the market, at which about 2000 citizens were present, besides 300 ladies in a temporary gallery erected for their accommodation and that of the band. The last mayor of the old Corporation was in the chair. On this occasion it was stated, and has remained uncontradicted, that though the names of other architects are joined with that of Mr. Grainger, and though it is his practice so to consult them as to afford them the most liberal scope for the exercise of their powers of design, all the essential points of design, in erections for which he is responsible, are his own.

This market is the finest in the kingdom, exceeding even the Hungerford and Liverpool markets in size and convenience. The Newcastle exceeds Hungerford Market in the proportion of 9050 to 6400 square yards; and it exceeds St. John's Market at Liverpool in the propor-

tion of 9050 to 8235 square yards. This is exclusive of the ranges of neighbouring shops, which might not unfairly be considered as belonging to the market. No fault has been found with its arrangements, and it answers its purposes in every respect.

The Green-market is a hall 318 feet long, 57 feet wide, and 40 feet high. In this hall was held the Promenade of the British Association, in August, 1838, when the place was adorned with evergreens and a display of plants, and lighted with gas. The two elegant fountains were then wreathed with gas-lights, within the falling water, with beautiful effect.

The entire Market covers a space of 338 feet by 247. Its area is two acres. It has fourteen entrances from the streets, and contains 243 shops, to shut up and lock. The shops and avenues are ceiled and plastered. The basin of each of the two fountains holds 3000 gallons. The Corporation arms are seen in a recess at one end, and a clock at the other.

The Theatre was, as we have said, the other great impediment to the formation of Grey Street. It was of no older date than 1788, had cost 6000*l*., and was a neat and convenient building. There was some hesitation on the part of the proprietors about selling it, though no discontent at the terms offered by Mr. Grainger. At length, the bargain was concluded. In return for the old Theatre, Mr. Grainger gave the proprietors the new one (which we shall hereafter describe), and the sum of 500*l*. So far, however, were all parties from being agreed, that some of the persons concerned intended to apply for an injunction to stop proceedings. But to stop Mr. Grainger's proceedings requires more readiness than is often to be found anywhere but in himself. Within three hours from the sealing of the contract, the chimneys of the Theatre were down, and before any message could have reached London, the whole had disappeared. Another instance of his promptitude may be mentioned here. A house in Grey Street projected in an unsightly manner, so that it became of importance to the architect to get possession of it. The different owners of the house and cellar made difficulties, and Mr. Grainger was longer than usual in carrying his point. At last he succeeded, but not before the contest had interested the inhabitants, who amused themselves with watching whether the architect's design was to be injured by the projection of this one house. The purchase being effected, the tenant's family were, that very hour of the evening, removed to a house which Mr. Grainger had made comfortable for them; and their fires were still burning when the demolition of their late dwelling began. In the morning, when crowds came to see how the affair proceeded, not a vestige of the house remained.

The ground was now cleared for the "new town;" but yet greater difficulties remained in managing the levels. Mr. Grainger himself says, that his greatest fatigues and anxieties have been about his excavations. Over these he has spent many whole nights, after long days of labour. At his slackest times, his practice is to rise at half-past five; but he thinks little of occasionally devoting his nights to his works. The outlay of money, as well as of labour, in preparing the ground was prodigious. The purchase of old property was scarcely more expensive. As the new property lay in the Dean, hills had to be levelled and valleys filled up, to unite the new and old streets. The new lines of streets were indicated by poles stuck in the ground; and these poles so ran up hill and down dale, the summit of one being often below the root of another, that the spectators could hardly imagine this the site of streets that were to exhibit a perfect level or a gradual ascent. Throughout a wide area, the excavations for the streets were to the depth of 17 feet, and for the basement story of the houses, 27 feet. Close by, or in the midst, valleys had to be filled to the depth of 35 feet. Sometimes it was necessary to make a descent an ascent, and sometimes the reverse. All this was exclusive of the trenches for foundations, which were in some places 54 feet deep, having more masonry under ground than above. It may be worth while to relate the amount of work of this kind done in the Nuns' Field, in preparation for the new streets.

After filling up the valleys from the levelling of the ridges, soil was carted away, at 2*d*. per load, to the amount of 1040*l*. paid to one individual, and at least as much more elsewhere. Thus 250,000 loads were carted. At 18 cubic feet per load, this amounts to four millions and a half of cubic feet, or enough to cover, a foot thick, 103 acres of ground. The digging and carting, exclusive of the cost of deposit, amounted to 21,500*l*. This removal of soil is exclusive of the large quantity which Mr. Grainger used on the spot for his building purposes. Some parts of the ground afforded fine sand, of which his mortar was made; and in other parts the soil was a good brick-clay, in which case the spot was turned into a brick-field. During the erection of Eldon Square, several hundreds of thousands of bricks were made on the spot; and a similar economy of excavation has been practised wherever it was favoured by the nature of the soil. Mr. Grainger's friends have often been amused by tokens of his recollections of them in the midst of his business. Many a load of fire-wood has one or another of his acquaintance received from him while he was about clearing his ground.

The external difficulties having been disposed of, it remains to be inquired how the mind of the artist became fitted for the work he was now about to achieve. This no one seems able to explain,—not even the man himself. It may be understood how a man of clear understanding, an enterprising and placid temper, and strict integrity might become as perfect a man of business as Mr. Grainger is,—of remarkable foresight and comprehension of views, great prudence, and enabled by his honour and punctuality in pecuniary transactions to be enterprising to any extent. But whence he derived his powers as an artist remains a mystery. What his education was, we have seen, and how full has been the employment of his time since he left school. He has never been on the Continent, nor has associated with artists, except in consequence of his own enterprises. He attributes much to a visit to Edinburgh many years ago. What he saw there, gave him strong delight and a powerful impulse. He afterwards visited Dublin and London. It is also probable that he has of late derived advantage from such representations as books of plates can afford. This is all that is known of the training which enabled him to produce such works as we shall proceed to describe.

[To be continued.]

ACCOUNT OF AN EXTRAORDINARY MUMMY FOUND IN AUVERGNE.

The following account is extracted from the 'Travels in Auvergne, in 1787 and 1788,' by le Cit. Legrand, published in the 2nd year of the Republic, at the printing-office of the Arts and Sciences, Rue Thérèse, à Paris.

On the 4th of February, 1756, as two peasants of the village of Martres-d'Artier were digging in a field, one of them felt his spade strike against a stone about a foot beneath the surface. He removed the earth in order to take it up, but, instead of a common stone, discovered a lid of tiles with a stone tablet about eight inches square at the end. He concluded he had met with a treasure, and calling his companion, they worked great part of the night and the two following days in clearing away the soil, and found their prize to be a tomb shaped like a coffer, 7 feet long, 5 feet 2 inches high, and 32 inches wide, and so heavy that they could not move it. They broke one of its sides with their pickaxes, and found a leaden coffin within, which they conveyed clandestinely to their own

dwelling to search for any treasure it might contain; whether their cupidity was gratified or not, was never ascertained. They asserted that they found nothing in the coffin but the body, which they did not remove, but brought it back the next day, and replaced it in the tomb exactly as it was before.

There was nothing remarkable in the structure of the tomb; it was made of grey porous stone, very clumsily worked, without inscription, figure, or ornament. The coffin, like the tomb, was composed of two pieces, which shut close, one over the other; but there were two narrow apertures, about two inches long, in the coffin, one above the mouth, the other above the stomach of the corpse. The body was that of a boy of about ten or twelve years old, embalmed with skill, and so fresh and perfectly preserved that it was impossible to help admiring it.

Of all the mummies there is perhaps not one, except this of Martres, which has been preserved entire, and without any mutilation whatever, and with all the freshness and appearance of life which it retained in sleep.

No one has been able to discover of what materials the embalment was composed; all that I could learn from the official inquiry (procès-verbal) which took place at the time, and was inserted in 'Le Mercure,' April, 1756 (page 127), amounts only to this—that the composition was neither bitter nor acid; that it seemed to be a mixture of several aromatics so perfectly combined that no one could be particularly distinguished, but so active and penetrating, that by just touching it, the hand retained the smell for several days in spite of washing with hot water or vinegar, and that after a month, though exposed to the open air, the tomb had not lost its odour.

The process employed for the preservation of this mummy resembled in some respects that of the Egyptians. In the first place, a coat of this composition was spread over the whole surface of the body, and had given it a slight tinge of yellow. Then a very thin layer of tow; then a piece of fine linen, which enveloped the tow; then bandages which confined the linen. The feet and the hands were left bare, and enclosed in little bags filled with the aromatics; and the head was covered with a cap, which appeared to be a prepared skin. In this state the corpse resembled an infant in swaddling clothes. For the last envelope there were two handkerchiefs, the undermost of extremely fine linen; the outside one of coarser cloth resembling a mat. All the linen, the bandages, and the tow were impregnated with this aromatic mixture.

The body was placed in the coffin with the hands extended on the side. The head was large, and bald in front. The hair behind was chesnut colour, and about two inches long. On the top of the head an incision had been made, and the skin raised, as if to introduce the aromatics into the skull, but the skull not having been opened, it was not ascertained whether the compost had penetrated into it, or in what state the brain remained.

For the rest, the teeth, the ears, the tongue, and every part of the face remained uninjured, and had not suffered the slightest alteration. The lips were fresh and red, the hand white and plump, and, what was still more extraordinary, the eyes, which one should have thought would have been dim or obliterated, preserved the brilliance of those of a living person. All the joints were pliable, and could be moved; the fingers had even spring enough to return to their position when bent. None of the joints were stiff, except that of the foot; however, persons acquainted with anatomy observed with surprise that the bones of the legs and arms were soft, and could be easily bent, when all others, particularly the skull, had preserved their hardness. A surgeon who had made an incision with his knife into the region of the stomach, introduced his finger into the orifice to ascertain the state of the diaphragm, and also of the bowels. He found the one soft and supple, the others elastic and entire. If through the opening the breast-bone was raised, it moved and sunk again like a pair of bellows.

This astonishing elasticity proves how much the preparation of the mummy of Auvergne excels that of the Egyptian mummies; not even had the intestines been removed, as in Egypt, but remained entire and with all their springiness, insomuch that if they were blown into, they swelled out in a moment.

It is observed in the procès-verbal that they appeared to be spread over, both within and without, with some preparation which rendered them transparent; and this preparation was considered to be different from that on the body, as it appeared to be clearer. It is further added, that as no incision in the skin could be discovered, the probability was that the liquor had been injected by the anus.

The peasants in the village of Martres concluding the body so wonderfully preserved must be the remains of a saint, carried it into the church, rang the bells, and committed all sorts of superstitious folly, carrying away the aromatics from the mummy, tearing the bandages and linen, and cutting the skin, and even extracting the lower teeth for reliques. The bishop of Clermont, the successor of Massillon, hearing of these extravagancies, ordered the body to be buried, and accordingly it was buried; but some of the authorities of Riom, whose jurisdiction extended to the village of Martres, ordered the saint's body to be disinterred, conveyed it to Riom, and deposited it in the hospital of the town, enclosed in a case, part of glass, in the hopes that the strangers whom curiosity might attract would be liberal of their alms to the hospital. But very shortly after an order arrived from Versailles to convey the mummy to Paris, to be placed in the Cabinet of Natural History, and there it now is, but blackened, dried, hardened, and so much disfigured that those who saw it when first discovered could not know it again.

The Rationale of Speaking.—There seems to be an inveterate impression on the public mind, that the essence of statesmanship consists in the faculty of pouring forth an unlimited torrent of words; that he is the wisest and greatest politician who is the readiest, the most prolix, and most dextrous debater. Nothing can well be more erroneous than this conclusion. Speaking in public is a habit, and there are few men, wise or unwise, who could not become ready speakers by practice. It is true, that among men equally trained and accustomed to the public expression of their opinions, a difference in point of fluency may generally be observed: some possess the faculty in an extraordinary degree, while others are as remarkably deficient in it; but if we examine into the qualities of mind which are the causes of this difference, we shall probably discover nothing to establish a connection between soundness of judgment and fluency of speech. Facility of expression appears to depend very much on the predominant mode in which the ideas are associated. If an individual's thoughts are principally connected together by circumstances of time and place and superficial resemblance, by those casual ties, in a word, which usually prevail in the mental trains of people little accustomed to reflection, he possesses within himself the chief elements of a great talker. One idea perpetually suggests another, and as they all seem equally dependent, and there is no reference to any particular point on which the whole series is to be brought to bear, or at all events a very loose reference, no cause exists why the speaker should terminate his oration, except what the impatience of his audience supplies; or except, perhaps, the failure of his own physical strength. On the other hand, if a speaker's ideas on any subject rise in his mind because they are logically dependent, because they are strictly connected with the question before him, they are self-circumscribed within determinate bounds; a few words will frequently be sufficient to present them to the hearer; and as every thought will have a bearing on the conclusion intended to be proved, the process will naturally be brief.—*Bailey's Rationale of Representation.*

RICE.

Ory'za is the name by which rice was known to the Greeks and Romans, and which has been adopted by botanists as the generic name of the plant yielding that valuable grain. The Greek name would appear to be derived from the Arabic *Aruz*, and this is allied to *Uri*, the Telinga name of cultivated sorts; but the Sanscrit names are *Unoo*, *Dhanya*, *Vrihi*; the wild kind being called *Nivara*, while the great tanks are called *erays*, in the Tamul language. The European names are evidently all derived from the same sources, but the name *paddy* is applied to the rice in its natural state, or before being separated from the husk. The natives of India call it *dhan* in this state, as well as the plant, and the rice itself is called *chanwul*.

The genus *Oryza* has two glumes to a single flower; paleæ two, nearly equal, adhering to the seed; stamens six, and styles two. Dr. Roxburgh describes two species: one, *O. sativa*, distinguished by its diffuse panicle; the other, *O. coarctata*, has the panicle contracted, the valvulets of the calyx subulate, and the leaves culm-clasping. This species is a native of the delta of the Ganges, and was first discovered there by Dr. Buchanan in 1796, but was not found to be applied to any use.

The common rice, *Oryza sativa*, unlike many long cultivated grains, is still found in a wild state in and about the borders of lakes in the Rajahmundy Circars, though never cultivated, because the produce is said to be small compared with that of the varieties in cultivation. The grain is, however, remarkably white, palatable, and reckoned very wholesome; hence it is carefully gathered, and sells dear. The rich esteem it a dainty, and, to make it still more delicate, boil it only in steam.

The rice plant is therefore an undoubted native of India, from which country it has spread over a great part of the world, especially in Asia, where it forms the principal portion of the food of the inhabitants, but it has also from very early times been introduced into the southern parts of Europe. Theophrastus describes it in book iv., c. 5, with other Indian plants, and mentions it as growing in water, and that its inflorescence is like that of milium or panicum, and not in form of a spike. Adam Smith adduces it as one of the most prolific of grains. "A rice-field produces a much greater quantity of food than the most fertile corn-field. Two crops in the year, from thirty to sixty bushels each, are said to be the ordinary produce of an acre." Rice is now extensively cultivated in North and South Carolina, and in Georgia; also in Italy and the south of Spain, and likewise a little in Germany. The perfect system of irrigation and tillage which was introduced into Italy at so early a period no doubt rendered the cultivation easy, as the climate is also sufficiently hot and regular.

As the summer temperature of many countries is high, it is easy to cultivate an annual like rice, where water is abundant and irrigation easy; but as the summer temperature of most European countries is too low, and not long enough continued, and far from regular, it is hopeless to attempt the culture of a grain which requires so much heat, and which has the disadvantage, from the moisture arising from irrigation, of making a country unhealthy; but this is not the case in the rainy season of tropical countries, where the rice-field is not much more moist than the rest of the country. Its culture has been attempted in England, and a small crop was raised near Windsor, on the banks of the Thames; and it has been hoped that the mountain rice, which is known to grow at considerable elevations in the Himalayan Mountains, might be suited to an English climate. This variety certainly requires a less degree of heat, but it seems to be forgotten that temperature is only one of the elements of climate, and that moisture may be supplied to a plant either by the soil or the atmosphere, and the latter may be moist when the former is comparatively dry. Rice is sown in the Himalayas only in places within the influence of the periodical rains, that is, from about the middle of June to the end of September. In some places it is irrigated, and in others it is not, but rain falls very frequently, and the air is almost always in a moist state, from being charged with moisture from the heated valleys, which is deposited on the mountains, when it reaches an elevation where it becomes cooled beyond the point of saturation. The temperature also is so uniform as not to vary 10° of Fahr. from 70° for three months. So in the Isle of France the mountain rice is cultivated only in the rainy season.

The rice so extensively cultivated throughout India (and the cultivation in China, as described by Sir G Staunton, is very similar) depends upon rain, or irrigation either from rivers or tanks. These Capt. B. Hall ('Frag. of Voyages,' vol. iii., p. 18) describes in one situation, near Nundydroog, as spread over a valley, which was from six to eight miles across, and that they were used for irrigating myriads of rice-fields. The embankments are sometimes miles in length, and then of a waving snake-like shape. One valley was pointed out to Captain Hall, about a mile broad and forty miles long from end to end, which included between thirty and forty tanks, every intermediate square yard of the intermediate spaces being richly cultivated, while the surrounding country appeared to be condemned to perennial sterility.

Dr. Roxburgh states that he never saw or heard of an Indian farmer manuring in the smallest degree a rice-field; yet these fields have probably for thousands of years continued to yield annually a large crop of rice, on an average from thirty to sixty fold; even eighty or a hundred has been known. The best rice-fields are extensive open plains through which large rivers pass. The soil is generally of good depth; the best are those annually overflowed by the inundations, from which they necessarily receive some fertilising matter; but the greatest part of the rice-lands depend on the rains only, and receive no help except from it and the air. The varieties of rice are innumerable; forty or fifty at least are described. They are divided by Dr. Roxburgh into two kinds: one, called in Telinga, *Poonas* (Sans., *Asoo*), is sown thick in June or July, and transplanted in about forty days, when the plants are from nine to eighteen inches high; the fields are then kept constantly wet, more or less flooded, as some sorts require very little water, while others require a great deal. When the grain is ripe, the water is drained off, and the crop cut down with the sickle; it is either stacked or trod out by cattle. The grain is preserved in pits dug in high ground and lined with the rice-straw. The straw is stacked by the careful farmer for feeding his cattle during the hot weather.

The second division of cultivated rice is called *Pedder Worloo* by the Telingas. The grains are awnless, and both the unhusked and husked rice, in most varieties, are white and of excellent quality, though some require much water. In other parts of the country rice is divided, according to the seasons in which it is reaped, into that which ripens in the hot weather of spring, in the summer, or in the winter.

Buchanan states that two crops in the year from the same land do not yield much more than a single good crop would. But the seasons are so uncertain, and the latter crop so liable to fail, that they cultivate as much as possible for the first crop. This is reaped in the rainy season, when the straw cannot be preserved, and as rice-straw is almost the only food which the cattle have in many districts, there is an absolute necessity for sowing the second crop for fodder.

Rice is no doubt the grain which yields food for the largest portion of the human race, but even in India great numbers do not eat rice; in fact, in all the north-western provinces wheat is the principal crop, and the natives eat

wheaten cakes, and have rather a contempt for rice-eating districts. It abounds, however, in nourishment, being composed almost entirely of fecula, that is, 96 per cent., and therefore cannot be baked into bread; but it is more easily cooked. It is light and wholesome, and easily digested, and might form a much larger portion of the diet in Europe than it does. Europeans in India eat it at breakfast as well as at other meals, and with fish as frequently as with their curries.

a, panicle of the rice plant, with ripe grains; *b*, a single grain, enveloped in its husk and awned.

Of the kinds imported into England, the Carolina is the best, and is grown in the marshy grounds of North and South Carolina. The grains are shorter, broader, and boil softer than the Patna rice, which is the best Indian kind known in this country, though in India there are several superior varieties, as, for instance, the Pilibeet, which are much more esteemed there. In the year 1838, 238,367 cwts. of cleaned and 218,207 cwts. of rough grain were imported into England. The quantity retained for consumption in the United Kingdom, in 1837, was 282,975 cwts.; in 1838, 289,063 cwts.; producing a duty in the former year of 25,327*l.*, and in 1838, of 24,606*l.* The consumption is in some measure influenced by the price of wheat. The relative values may be judged of by the price of the Carolina rice being 20*s.* when the Patna was 17*s.*, Bengal white 13*s* 6*d.*, and the Cargo only 9*s.* 6*d.* The Cargo is a reddish coloured, coarse, but sweetish grain, which is liked by the lower caste of natives of India.—*From the Penny Cyclopædia.*

The Natives of Tierra del Fuego.—The most remarkable traits in the countenance of a Fuegian are his extremely small low forehead, his prominent brow, small eyes (suffering from smoke), wide cheek-bones, wide and open nostrils, large mouth, and thick lips. Their eyes are small, sunken, black, and as restless as those of savages in general. Their eyelids are made red and watery by the wood smoke in their wigwams. The chin varies much: that of a Tekeenica is smaller and less prominent than that of an Alikhoolip, in whom it is large and rather projecting, but there is much variety. The nose is always narrow between the eyes, and, except in a few curious instances, is hollow in profile outline, or almost flat. The mouth is coarsely formed (I speak of them in their savage state, and not of those who were in England, whose features were much improved by altered habits and by education): their teeth are very peculiar; no canine or eye teeth project beyond the rest, or appear more pointed than those; the front teeth are solid, and often flat-topped like those of a horse eight years old, and enamelled only at the sides; the interior substance of each tooth is then seen as plainly, in proportion to its size, as in that of a horse. Their hair is black, coarse, and lank, excepting the few instances mentioned below. It grows by single hairs, not by piles, or by little bunches like very small camel-hair pencils. It does not fall off, nor does it turn grey until they are very old. Little, if any, hair is seen on the eyebrow. They would have a straggling beard, but scrupulously pull out every hair with tweezers made of mussel-shells.

When discovered by strangers, the instant impulse of a family is to run off into the wood. After a short time, if nothing hostile is attempted by the intruders, and if they are not too numerous, the men return cautiously, making friendly signs, waving pieces of skins, rubbing and patting their bellies, and shouting. If all goes on quietly, the women frequently return, bringing with them the children; but they always leave the most valuable skins hidden in the bushes. This hasty concealment of seal or otter skins is the result of visits from sealers, who frequently robbed families of every skin in their possession, before the natives understood the motives of their expeditions in boats into the interior waters of Tierra del Fuego. Sometimes nothing will induce a single individual of the family to appear; men, women, and children hide in the thick woods, where it would be almost impossible to find them, and do not show themselves again until the strangers are gone; but during the whole time of their concealment a watchful look-out is kept by them upon the motions of their unwelcome visitors.

Scarcity of food, and the facility with which they move from one place to another in their canoes, are, no doubt, the reasons why the Fuegians are always so dispersed among the islands in small family parties, why they never remain long in one place, and why a large number are not seen many days in society. They never attempt to make use of the soil by any kind of culture; seals, birds, fish, and particularly shell-fish, being their principal subsistence: any one place, therefore, soon ceases to supply the wants of even one family.

In a few places, where the meeting of tides causes a constant supply of fish, especially porpoises, and where the land is broken into multitudes of irregular islets and rocks, whose shores afford an almost inexhaustible quantity of shell-fish, a few families may be found at one time, numbering altogether among them from twenty to forty souls: but even those approaches towards association are rare, and those very families are so migratory by nature, that they do not remain many months in such a spot, however productive it may be, but go wandering away among the numerous secluded inlets or sounds of their country, or repair to the outer sea-coast in search of seals, a dead whale, or fragments of some wrecked ship. During the summer they prefer the coast, as they then obtain a great quantity of eggs and young birds, besides seal, which come ashore to breed at that season; and in the winter they retire more into the interior waters in search of shell-fish, and the small but numerous and excellent fish which they catch among the sea-weed (kelp).—*From Darwin's Voyages of the Adventure and Beagle, under Captains King and Fitzroy.*

Discourse.—He that questioneth much shall learn much and content much; but especially if he apply his questions to the skill of the persons whom he asketh, for he shall give them occasion to please themselves in speaking, and himself shall continually gather knowledge.—*Bacon.*

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